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of the specification. This example - - - - -  
tions the pyrolysis of  $C_3F_8$  fluorocar-  
bon with either  $Na_2CrF_6$  or  $Na_2TiF_6$  catalysts  
to produce  $C_3F_8$  fluorocarbon.

The examiner criticized this example for not stating that the product is unsaturated, particularly in view of the fact that it could be a cyclic compound as shown by Benning et al. Page 1, column 1, line 25. Since the example gives no information as to what may be produced from  $C_4F_{10}$  fluorocarbon with the catalyst, the examiner thought it insufficient to support a claim which embraces a conversion of  $C_4F_{10}$  fluorocarbon.

Appellants consider the examiner too hypercritical in making this rejection. Concerning the production of unsaturated compounds they note that the whole specification is directed to this single purpose and therefore the  $C_3F_8$  compound produced in Example 8 must necessarily be unsaturated not cyclic. The obvious closeness of  $C_3F_8$  and  $C_4F_8$  as starting materials is regarded by appellants as a sufficient suggestion of the applicability of the process of Example 8 to  $C_4F_{10}$  as well as the  $C_3F_8$  as specifically designated by the example, especially since  $C_4F_{10}$  has been specifically disclosed as a starting material at several points in the specification. The inclusion of  $C_4F_{10}$  in claim 16 is therefore said to be highly reasonable.

In our opinion, the extension of Example 8 to a  $C_4F_{10}$  hydrocarbon is speculative and does not constitute proper support for a claim. The rejection of claim 16 will therefore be sustained.

[2] Appellants have retreated from the position of asserting patentability of broader claims which include saturated aliphatic polycarbon fluorocarbon compounds broadly. Under these circumstances, there is no basis for extending a specific example to embrace other compounds of this broad class than the one specifically named.

The appeal is dismissed as to claims 4 to 7 and 11 to 14.

The decision of the examiner is affirmed as to claims 9 and 16.

## Patent Office Board of Appeals

### Ex parte JACKSON

Opinion dated June 27, 1956

## PATENTS

### 1. Specification—Sufficiency of disclosure (§ 62.7)

Ranges of percentages of elements in claim are not arbitrary where they are based on all examples disclosed in application in which all elements recited in claim are present.

#### Particular patents—Alloy

Jackson, Magnesium-Lithium Base Alloy, claim 2 of application allowed.

#### Appeal from Division 3.

Application for patent, Serial No. 43,057. From decision rejecting claim 2, applicant appeals. Reversed.

ADAMS, FORWARD & MCLEAN, New York, N.Y., for applicant.

Before WOLFFE, DUNCOMBE, and ASP, Examiners in Chief.

WOLFFE, Examiner in Chief.

This is an appeal from the final rejection of claim 2, the only claim remaining in the case. It reads as follows:

2. A magnesium-lithium base alloy, containing less than 0.1% of sodium, consisting of at least 66% of magnesium; from 1% to 13.5% of lithium; from 1% to 5% of silver; from 4% to 20% of cadmium; from 0.15% to 0.25% of zinc; from 0.05% to 0.2% of nickel; from 0.16% to 0.24% of copper; from 0.1% to 0.2% of barium; from 0.05% to 0.10% of calcium; and from 0.15% to 2% of aluminum.

No references have been relied upon.

The claim relates to magnesium-lithium alloys which contain at least about 66% of magnesium, from 1 to 13.5% of lithium and less than 1% of sodium. The composition of the claimed alloys is based on the following two discoveries: (1) that one or more of the alloying metals aluminum, cadmium, silver and zinc, when included in the above described magnesium-lithium base alloys, in amounts not appreciably greater than their solubility limits at ordinary temperatures, render the binary magnesium-lithium matrix work-hardenable and more creep resistant at room temperature; and (2) that the addition of small amounts of one or more "minor addition elements" including copper, calcium, nickel and barium, as well as many others, to the magnesium-lithium base alloy containing one or more of the

alloying metals aluminum, cadmium, silver and zinc provides an alloy of improved stability when age-hardened.

Quite a number of examples are given on page 2A of the specification to illustrate the invention. The claim under consideration is directed to the magnesium-lithium base alloys disclosed on this page of the specification in which a combination of the alloying metals aluminum, silver, cadmium and zinc is present and in which each of the minor addition elements nickel, copper, barium and calcium is also present.

Claim 2 stands rejected on the sole ground that it is based on new matter. In this connection the examiner stated in the final rejection:

"More specifically it is held to be improper to arbitrarily set limits or ranges for the constituents of a composition when there is no proper coordination for such limits or ranges in the disclosure. Take for instance the range of '1% to 5% of silver' as now recited by the claim, the justification for this range should be found at page 2-A, wherein a number of examples are presented which include silver in succeeding whole numbers from 0 to 6. \* \* \* In the case of the cadmium content there is even less justification for the range of 'from 4% to 20%.' Isolated instances utilizing '4%', '15%' and '20%' cadmium are not sufficient for arbitrarily assuming that all values between 4 and 20 would function in the composition in the manner applicant desires. In all probability they would and the assumption of a straight-line curve could be reasonably assumed. However in the event the curve were to dip at about 8% to 10% cadmium representing results diametrically opposed to applicant's but such values nevertheless would be covered, improperly so, by the present casting of the claim."

In his answer the examiner further stated:

"The claim includes additionally zinc, nickel, copper, barium, calcium and aluminum all of which now are represented by ranges in this claim, none of which are to be found to be disclosed as such in the specification. Page 2a of the specification is a table representing 15 specific alloys but nowhere are the ranges now claimed disclosed as such. Moreover, the reason for the ranges selected is not apparent from a study of page 2a. The values for silver and cadmium were mentioned in the final rejection letter as tending to indicate merely an arbitrary selection. There does not appear to be a

satisfactory explanation in the brief that the ranges selected are not in fact arbitrary."

In support of the position taken by him the examiner cited *Ex parte Kingston*, patent file No. 2,394,919, and *In re Davidson*, 1941 C.D. 121, 47 USPQ 440.

[1] We have considered the position taken by the examiner with care but we are constrained to hold that it is not sufficiently well founded. As indicated above the ranges recited in the present claim are based on all of the examples disclosed in the present application in which all the elements recited in the claim are present. These ranges, in contradistinction to the ranges recited in the claims ruled on in *Ex parte Kingston*, *supra*, are, therefore, not arbitrary. The situation in the present case is, in our opinion, similar to that in *Ex parte Kurtz*, patent file No. 2,600,995, where we held:

"It appears to us that since the Office places much emphasis on the disclosure of the examples which are present in the specification, it is ordinarily not improper to use all of the examples to set up a range of established operativeness. We find the decision in *Ex parte Kingston*, patent file No. 2,394,919, inapposite here, because in that case the new limits were not based on examples."

*In re Davidson*, *supra*, which is also relied on by the examiner to support his decision, is, in our opinion, not controlling here because in that case the claims as amended were held to be inconsistent with the original disclosure. This cannot be said about the claims presently before us.

As regards the range of cadmium recited in the claim the examiner admits that in all probability all values between 4% and 20% of cadmium "would function in the composition in the manner applicant desires," and that the assumption of a straight-line curve is reasonable. In view of this admission on the part of the examiner, it appears to us that the range of cadmium should not be objected to.

Accordingly, we will not sustain the rejection of claim 2 on the ground that it is based on new matter.

The decision of the examiner is reversed.